# Tableau-Project-User-Story-Marketing-Campaign-Analysis

## Overview:

This project is designed to analyze the effectiveness of marketing campaigns across various channels and customer segments. The marketing team, campaign managers, and executives will use the dashboard to evaluate campaign performance, identify high-performing channels, and make data-driven decisions for future marketing strategies.

### Practice Dataset (Uncleaned)

For this project, the dataset is uncleaned and may include:

* Missing values for campaign budget, cost, and click-through rates (CTR)
* Duplicate entries for campaign names or customer IDs
* Inconsistent campaign start and end dates
* Discrepancies in revenue or conversion data
* Data with incorrect or inconsistent regions/countries

### Example Dataset Fields:

* Campaign ID
* Campaign Name
* Campaign Type (e.g., Social Media, Email, TV, Print)
* Start Date
* End Date
* Total Budget
* Total Spend
* Impressions
* Clicks
* Conversions (number of sales)
* Revenue (from campaign)
* Customer ID
* Customer Segment (e.g., Demographic, Interest)
* Region/Country
* Device Type (Desktop, Mobile, etc.)

## Stakeholders & Requirements:

### Marketing Manager:

* Needs to see a comprehensive overview of all marketing campaigns to assess their performance.
* Wants to compare campaigns by different channels (Social Media, Email, etc.) to determine which are driving the highest ROI.
* Should be able to track customer engagement (CTR, conversions) to optimize targeting.

### Campaign Manager:

* Needs to evaluate campaign effectiveness across different customer segments, channels, and regions.
* Wants to drill down into the details to see how well each individual campaign performed.
* Needs the ability to compare actual spend vs. budget and calculate ROI for each campaign.

### Executive Team:

* Requires a high-level view of campaign performance to make decisions about future investments.
* Should be able to see revenue generated by each campaign and understand how marketing dollars are being allocated.
* Wants to compare year-over-year (YoY) campaign performance to identify growth trends.

## Dashboard Requirements:

**1. Campaign Overview:**

* Display an overview of total spend, revenue, and ROI for each campaign.
* Use a **KPI card** to show the total revenue and compare it against campaign budgets to calculate ROI.

### 2. Channel Performance:

* Create a **bar or pie chart** comparing the performance of different campaign channels (Social Media, Email, TV, Print) based on metrics like conversions, impressions, and click-through rate (CTR).

### 3. Campaign Trend Analysis:

* Use **line graphs** to display the trend in spend, clicks, and conversions over the course of the campaign duration (daily or weekly).
* Highlight any spikes or dips in campaign activity to understand patterns or anomalies.

### 4. Customer Segment Analysis:

* Show performance by customer segment, region, and device type.
* Use **heat maps** or **bar charts** to compare how different segments perform in terms of conversions or revenue.

### 5. Budget vs Spend Analysis:

* Compare the actual campaign spend to the initial budget.
* Use **waterfall charts** or **bar graphs** to show how each campaign performed against its target budget.

### 6. Revenue by Campaign:

* Display a table of the top-performing campaigns based on revenue and conversion rates.
* Filter this data by customer segment, region, and channel.

### 7. Campaign Performance by Region:

* Display regional performance to identify areas with high engagement and conversion.
* Use **geographical maps** or **bar charts** to visualize performance by location

## Steps for Data Cleaning in Tableau Prep

1. **Identifying Null Values:**
   * Filter out or replace null values in critical fields like sales, impressions, and inventory levels.
   * For fields with categorical data (e.g., product category, campaign type), consider creating default categories for missing values.
2. **Fixing Duplicate Records:**
   * In both datasets, find duplicates (e.g., by matching on Campaign ID or Product ID) and decide whether to keep the first entry or aggregate the duplicates.
3. **Date Formatting:**
   * Ensure that dates such as campaign start and end dates, stock movement dates, etc., are in a consistent format. Use Tableau Prep’s "date" functionality to correct formats.
4. **Handling Outliers:**
   * In sales and revenue data, check for any extreme values that could skew analysis (e.g., a campaign that reported millions in revenue with only a small budget).
   * Use Tableau Prep’s filter or calculated fields to exclude extreme values if needed.
5. **Reformatting Data:**
   * Standardize categorical data for regions, customer segments, and campaign names. Use Tableau Prep's "Clean" step to fix inconsistencies.

## Final Steps:

* **Tableau Prep**: Prepare the data by cleaning and transforming the raw data into a usable format.
* **Tableau Desktop**: Create the visualizations and dashboards based on stakeholder requirements.
* **Publish**: After finalizing the dashboards, publish them on Tableau Server or Tableau Public for easy access and sharing.